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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,636	10/23/2003	Yaw-Ming Tsai	742433-49	9152
22204	7590	08/19/2005	EXAMINER	
NIXON PEABODY, LLP			WON, BUMSUK	
401 9TH STREET, NW			ART UNIT	
SUITE 900			PAPER NUMBER	
WASHINGTON, DC 20004-2128			2879	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No.	Applicant(s)	
	10/690,636	TSAI ET AL.	
	Examiner	Art Unit	
	Bumsuk Won	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/23/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/690636, filed on 10/23/2003.

Oath/Declaration

2. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed on 10/23/2003. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of any foreign application. A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date.

Claim Objections

3. Claim 5 is objected to because of the following informalities: Claim 5 is depending on claim 6, and it is not in numerical order. The Applicant may have miswritten 4 instead of 6. Following claim rejections will assume that the claim 5 is dependent on claim 4. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antoniadis (US 6,366,017) which is Applicant's admitted prior art in view of Kanou (US 2004/0070709).

Regarding claim 1, Antoniadis discloses a top emission organic light emitting display (OLED), comprising:

- a substrate (note figure 2, item 30);
- a reflective layer (note figure 2, item 32) disposed on the substrate;
- a first electrode (note figure 2, item 33) disposed on the reflective layer (note figure 2, item 32);
- an organic layer (note figure 2, item 38, 40, 42) disposed on the first electrode (note figure 2, item 33);

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and a transparent second electrode (note figure 2, item 44) disposed on the organic layer (note figure 2, item 38, 40, 42);

wherein, as a bias voltage is applied to the top emission OLED via the first electrode (note figure 2, item 33) and the transparent second electrode (note figure 2, item 44), the organic layer (note figure 2, item 38, 40, 42) emits radiation in multiple directions, the reflective layer (note figure 2, item 32) reflects the radiation toward the transparent second electrode (note figure 2, item 44) (note column 4, lines 18-28).

Antoniadis does not disclose OLED with a contact surface between the reflective layer and the first electrode being a rough surface.

Kanou discloses a display apparatus with a contact surface (note figure 1, item 45a) between the reflective layer (note figure 1, item 45) and the first electrode (note figure 1, item 48) being a rough surface (note page 1, paragraph [0008], lines 9-11, "convex/concave structure", and figure 1, item 45a), for the purpose of improving performance of the reflection.

It would have been obvious to one of ordinary skill in the art to have a contact surface between the reflective layer and first electrode being a rough surface for OLED, for the purpose of improving performance of the reflection.

Regarding claim 2, Antoniadis discloses OLED, wherein the reflective layer (note figure 2, item 32) is made of aluminum (note column 8, line 66 – column 9, line 2).

Regarding claim 3, Antoniadis discloses OLED, wherein the organic layer (note figure 1, item 14, 16, 18) is composed of a plurality of compound layers, the plurality of compound layers comprise an electronic layer (note figure 1, item 18), a hole transport layer (note figure 1, item 14) and a light emitting layer (note figure 2, item 16).

Regarding claims 4 and 5, Antoniadis discloses all of the claimed limitations except for a switch disposed between the substrate and the reflective layer, wherein the switch is electrically coupled to the first electrode for controlling the radiation of the top emission OLED, and the switch is a thin film transistor.

Kanou discloses a display apparatus comprising, in part, a thin film transistor disposed between the substrate (note figure 1, item 40) and the reflective layer (note figure 1, item 45), wherein the thin film transistor (note figure 1, item 44) is electrically coupled to the first electrode (note figure 1, item 48) for controlling the radiation of the top emission OLED (note page 1, paragraph [0076], lines 8-10 and figure 1), for the purpose

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of achieving high quality image (note page 1, paragraph [0004], lines 8-12).

It would have been obvious to one of ordinary skill in the art to have a display apparatus comprising, in part, a thin film transistor disposed between the substrate and the reflective layer, wherein the thin film transistor is electrically coupled to the first electrode for controlling the radiation of the top emission OLED, for the purpose of achieving high quality image.

Regarding claim 6, Antoniadis discloses OLED comprising, in part, a cap layer (note column 4, lines 34-37, "DBR, distributed Bragg reflector", and figure 1, item 26).

6. Claims 7, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antoniadis (US 6,366,017) which is Applicant's admitted prior art in view of Cok (US 2004/0070335).

Regarding claim 7, Antoniadis discloses a top emission organic light emitting display (OLED), comprising:

a substrate (note figure 2, item 30);

a reflective layer (note figure 2, item 32);

a first electrode (note figure 2, item 33) disposed on the reflective layer (note figure 2, item 32);

an organic layer (note figure 2, item 38, 40, 42) disposed on the first electrode (note figure 2, item 33);

and a transparent second electrode (note figure 2, item 44) disposed on the organic layer (note figure 2, item 38, 40, 42);

wherein, as a bias voltage is applied to the first electrode (note figure 2, item 33) and the transparent second electrode (note figure 2, item 44), the organic layer (note figure 2, item 38, 40, 42) emits radiation in all directions, the reflective layer (note figure 2, item 32) reflects the radiation toward the transparent second electrode (note figure 2, item 44) for increasing brightness of the top emission OLED (note column 4, lines 18-28).

Antoniadis does not disclose a thin film transistor in the substrate, a planarization layer disposed on the substrate covering the thin film transistor, and electrical connection between first electrode and thin film transistor.

Cok discloses a thin film transistor (note figure 2, item 22) in the substrate (note figure 2, item 20), a planarization layer (note figure 2,

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item 21) disposed on the substrate (note figure 2, item 20) covering the thin film transistor, and electrical connection between first electrode and thin film transistor (note page 2, paragraph [0022], lines 5-8), for the purpose of generating and controlling light.

It would have been obvious to one of ordinary skill in the art to have a thin film transistor in the substrate, a planarization layer disposed on the substrate covering the thin film transistor, and electrical connection between first electrode and thin film transistor in OLED, for the purpose of generating and controlling light.

Regarding claim 9, Antoniadis discloses OLED, wherein the reflective layer (note figure 2, item 32) is made of aluminum (note column 8, line 66 – column 9, line 2).

Regarding claim 10, Antoniadis discloses OLED, wherein the organic layer (note figure 1, item 14, 16, 18) is composed of a plurality of compound layers, the plurality of compound layers comprise an electronic layer (note figure 1, item 18), a hole transport layer (note figure 1, item 14) and a light emitting layer (note figure 2, item 16).

Regarding claim 11, Antoniadis discloses OLED comprising, in part, a cap layer (note column 4, lines 34-37, "DBR, distributed Bragg reflector", and figure 1, item 26).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antoniadis (US 6,366,017) which is Applicant's admitted prior art in view of Cok (US 2004/0070335), in further view of Kanou (US 2004/0070709).

Regarding claim 8, Antoniadis in view of Cok discloses all of the claimed limitations except for a contact surface between the reflective layer and the first electrode is a rough surface.

Kanou discloses a display apparatus with a contact surface (note figure 1, item 45a) between the reflective layer (note figure 1, item 45) and the first electrode (note figure 1, item 48) being a rough surface (note page 1, paragraph [0008], lines 9-11, "convex/concave structure", and figure 1, item 45a), for the purpose of improving performance of the reflection.

It would have been obvious to one of ordinary skill in the art to have a contact surface between the reflective layer and first electrode being a rough surface for OLED, for the purpose of improving performance of the reflection.


Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bumsuk Won whose telephone number is 571-272-2713. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bumsuk Won
Patent Examiner


JOSEPH WILLIAMS
PRIMARY EXAMINER